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THE GREAT-BASIN TENT CATERPILLAR

Malacosoma fragilis, Strech.

The adult moths are of a dark tawny color with narrow, brown, transverse, bands across the forewings. The females are lighter in color than the males, and are larger. They have a wing spread of about 1¼ inches, while the males are less than 1 inch in expanse. Both sexes are strong fliers and normally migrate several miles during the flight period.

This insect is a destructive enemy of range browse, and during past epidemic periods has killed the forage cover on several thousand acres of open range in the Great Basin region. The periodicity of its epidemics vary in intervals from 5 to 20 years. However, it is annually active between epidemics as well but the damage done during these endemic periods is negligible.

Distribution: The known distribution of the species ranges from eastern Oregon and southern Idaho south thru the Great Basin to southern Nevada and California. This range also extends from the Cascades and Sierra Nevada Mountains eastward to Wyoming and Colorado.

Hosts: It is known to feed on several species of shrubs such as Ceanothus, Ribes, Aspen, and desert peach. The preferred host in the Great Basin, however, is bitter brush, Pershia tridentata.

Occurence: It occurs annually throughout its range; sparingly in the timbered sections, more abundantly in the open brush ranges.

Life History: Adult moths emerge and fly during the period from late May, thru June, and into early July. Seasonal dates depend on altitude and climatic factors. Eggs are laid during this period.

Eggs: These are deposited in compact masses, usually forming a band around the smaller stems of the host. Incubation is prolonged. The young caterpillars develop within the egg shells before fall, but the eggs do not hatch until the following spring.

Caterpillars: The young caterpillars leave the egg shells in March and early April and immediately set upon the leaves of the host. Feeding is heavy and the caterpillars grow rapidly, reaching their full growth by the middle of May. The caterpillars are gregarious; the product of one or several egg masses congregate in a single colony and remain together until pupation takes place. During this stage they spin up large, web-like nests of silken strands in the foliage of the host in which they remain and feed. The common name "Tent Caterpillar" is derived from these nests or tents. It is during this stage only that damage to the host occurs. This damage is due to defoliation and is often extensive.

Pupae: Pupation occurs inside hairy cocoons which are spun by the caterpillars and are composed of body hairs from the caterpillars and spun silk. They are usually attached to stems below the tents in which the caterpillars fed. Pupation begins in late May and extends thru June. About two weeks is spent in the chrysalid stage when the new adults emerge, thus completing the life cycle. There is only one generation of moths each year, but there is some overlapping of broods so that event periods do not exactly coincide with the previous outline in respect to dates.

Damage: This consists entirely of defoliation of the host. When severe (80 to 90 percent of leaves eaten), the result is death of the host plant. Severe defoliation over extensive areas occurs only during epidemic infestations.

Control: Control of epidemics is usually brought about thru natural causes within two or three years from the beginning of epidemics and occurs as a result of a proportionate increase of insect enemies which prey upon the eggs and caterpillars. It has been demonstrated that artificial control can be secured by the use of insecticides. Only those that are non-poisonous to grazing live stock and the host can be employed. Light penetrating oils meet these requirements and are highly toxic to the insect in both the egg and larval stages.

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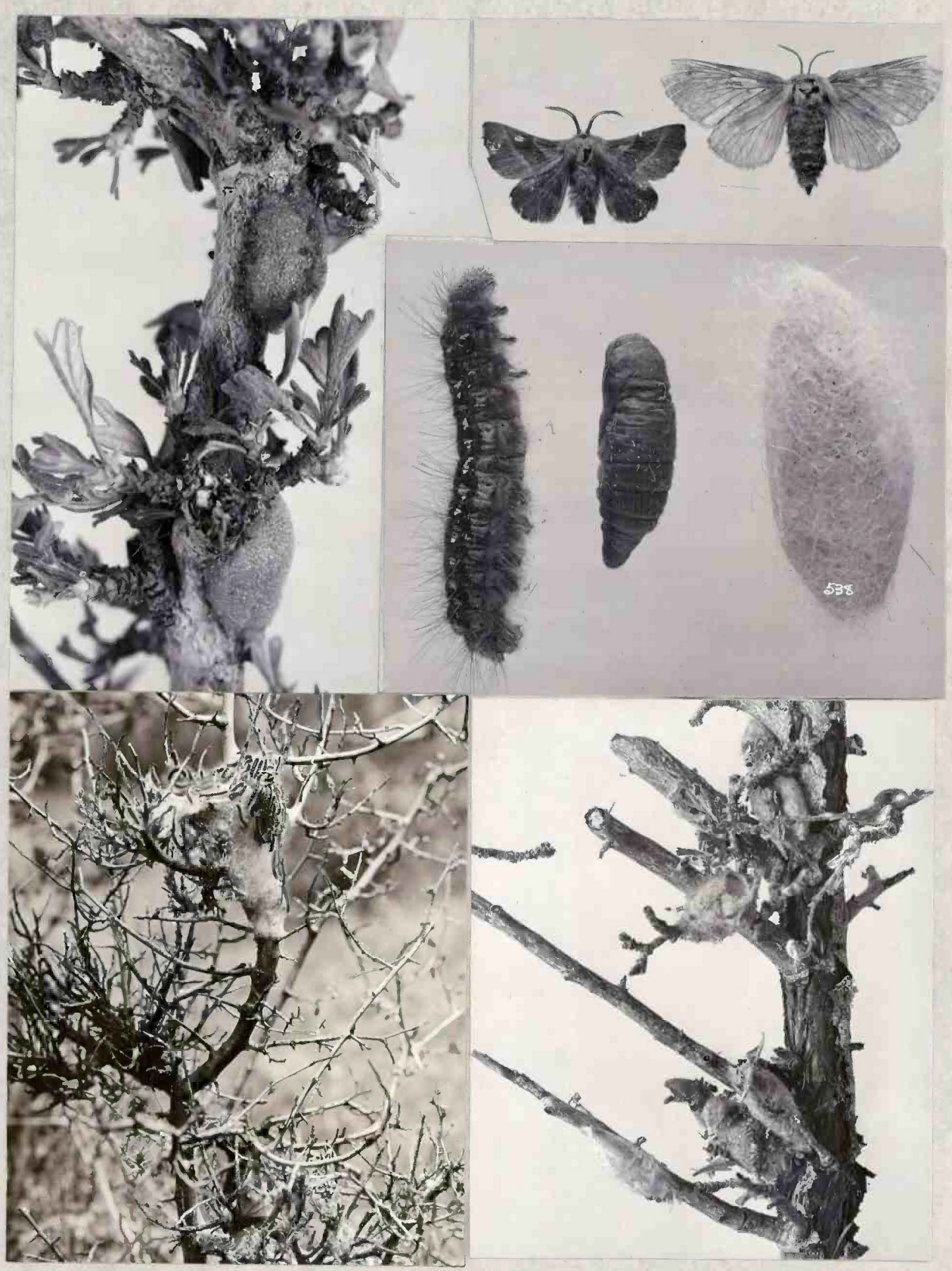

Fig: 1 -Life history of the Great Basin tent caterpillar, Malacosoma fragilia, Strech. 1: Adult moths, male and female. 2: Egg masses on bitter brush. 3: Full grown caterpillar, pupa, and cocoon. 4: Colony of caterpillars on web, or, "tent," attached to bitter brush. 5: Cocoons attached to stem of host.